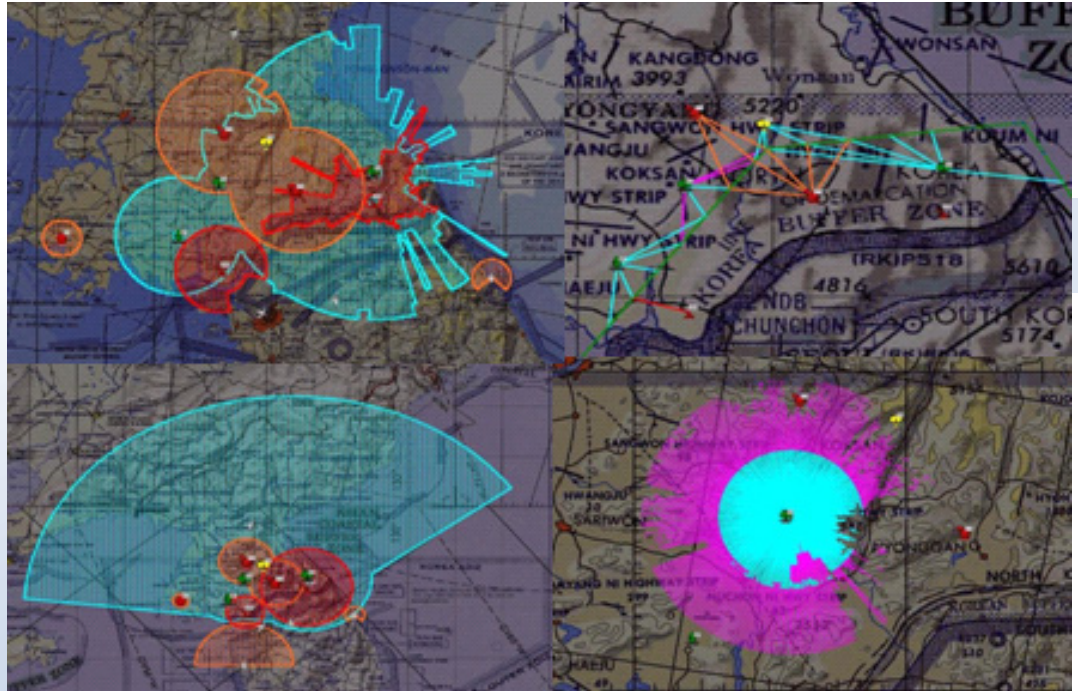*Sample IMOM screens showing (clockwise from top right) route, radials, maximum range and contours*

Improved Many-on-Many (IMOM)

Providing premier service to a broad range of customers

National Security

Background

Improved Many-On-Many (IMOM) Planner is a software application developed at the Idaho National Laboratory (INL) for the Air Force Information Warfare Center (AFIWC) to model electronic combat (EC) scenarios. It is a 2-D graphics oriented user-interactive program that aids in mission planning and analysis.

Model Description

IMOM^{Planner} visually displays the complex interaction of multiple ground based radar systems being acted upon by multiple airborne ECM aircraft.

IMOM^{Planner} models the detection capabilities of radar effects, the effects of Stand-Off Jamming (SOJ) platforms, and the effects of Self-Protection Jamming (SPJ) platforms.

The model is capable of loading a detailed Order of Battle (OB) for virtually any geographic region of the world, add the effects of terrain masking and ECM on the OB, exploit the results to perform a variety of analysis, and provide hard copy post processing in a variety of formats.

IMOM^{Planner} models virtually any type of ground or air-borne radar system, virtually any type of jamming system, and any airborne platform.

Limitations

IMOM^{Planner} does not include weather conditions, ducting phenomena, multi-path andionosphericbouncing in propagation calculations.

Input Requirements

IMOM^{Planner} will accept an OB from numerous electronic sources. IMOM Planneris capable of utilizing both digital terrain elevation data DTED and CARDG map data

INL
Idaho National Laboratory
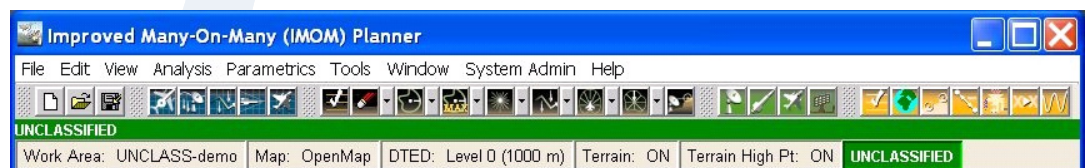
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INL is a U.S. Department of
Energy national laboratory
operated by Battelle Energy
Alliance

Continued from front

from NIMA. All other input files are provided with the program, such as radar parameters, Stand-Off Jammer (SOJ) characteristics, and Self-Protection Jamming (SPJ) effectiveness tables.

Technical Method

For radar predictions, the maximum detection range is defined as the minimum value of the radar range equation calculation, the radar scope range, the radar's maximum unambiguous range, or the maximum range of any weapon system associated with the radar. If the target is not within the maximum detection range of the radar, then the target is not detected.

Model Output

There are several types of IMOM^{Planner} output: color graphics of the radar detection areas, color coded evaluation of detection along flight routing, color coded analysis of stand-off jamming effects and altitudes and text summaries of all the above for lethal/ non-lethal combat targeting nominations. All types of color graphics may be combined or displayed separately on color graphics capable computer screens.
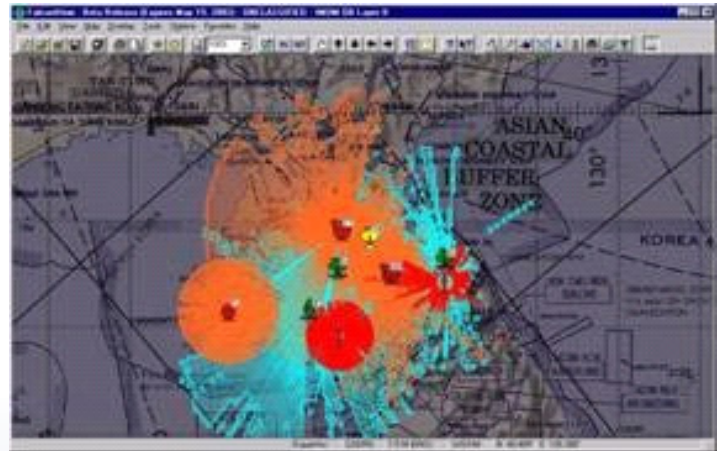
Sample IMOM screen, combining model outputs

Computer System Requirements

Computer
Linux/UNIX Workstation or Personal Computer (PC) using Windows 98/NT/2000/ XP

Memory
512 Mbytes RAM

Storage
100-150 Mbytes plus terrain

Language
C++ and JAVA

Documentation
Installation Notes, Users Manual, Model Description, Data Dictionary, Software Version Description and Java APIJavaDocare currently available on-line.

Security Classification

The IMOM^{Planner} program is UNCLASSIFIED when it is provided without data files. The data files and operating system are classified according to the source of the data, and classified processing is subject to the limitations of the computer system running IMOM Planner.

Distribution/Licensing Requirements

IMOM^{Planner} is available without charge to any federal agency. Contractors may obtain IMOM^{Planner} only in conjunction with a government contract; contact 453 EWS/EWRD for details.

IMOM^{Planner} was developed at the INL for the Air Force Information Center

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